



AMENDMENT TO THE CLAIMS

Please cancel claims 21 – 24 and 27 - 30, amend claims 15 and 20, and add new claims 31 – 37, as listed in the following claims:

Claim 1 (Withdrawn) A plastic product covered with a clear coating, the product comprising:

a plastic substrate; and

a clear coating;

wherein the substrate having at least one surface covered by the clear coating through an in-mold-coating method.

Claim 2 (Withdrawn) A plastic product covered with a clear coating, the product comprising:

a plastic substrate;

a pigmented coating; and

a clear coating;

wherein the substrate has at least one surface covered by the pigmented coating through an in-mold-coating process; and wherein the pigmented coating is covered by the clear coating through the in-mold-coating process.

Claim 3 (Withdrawn) A plastic product covered with a clear coating, the product comprising:

a plastic substrate; and

a clear coating;

wherein the substrate has at least one surface covered by the clear coating; wherein the interactions between the at least one surface and the clear coating include covalent bonds; and wherein the clear coating is capable of resisting delamination and/or degradation caused by sunlight, heat, acid rain, and other weather-related factors, and capable of inhibiting fading of the surface of the substrate covered by the clear coating.

Claim 4 (Withdrawn) A plastic product according to claim 3, wherein the substrate comprises aromatic polyurethane.

Claim 5 (Withdrawn) A plastic product according to claim 4, wherein the clear coating comprises aliphatic polyurethane.

Claim 6 (Withdrawn) A plastic product according to claim 3, wherein the clear coating has a thickness of between 0.0001 inches and 0.025 inches.

Claim 7 (Withdrawn) A plastic product according to claim 3, wherein the clear coating has a thickness of between 0.0005 inches and 0.005 inches.

Claim 8 (Withdrawn) A plastic product according to claim 3, wherein the substrate comprises pigments.

Claim 9 (Withdrawn) A plastic product covered with a clear coating, the product comprising:

- a plastic substrate;
- a pigmented coating; and
- a clear coating;

wherein the substrate has at least one surface covered by pigmented coating; wherein the pigmented coating is covered by the clear coating; wherein the interactions between the substrate's surface and the pigmented coating include covalent bonds; wherein the interactions between the pigmented coating and the clear coating include covalent bonds; and wherein the clear coating is capable of resisting delamination and/or degradation caused by sunlight, heat, acid rain, and other weather-related factors, and capable of inhibiting fading of the pigmented coating.

Claim 10 (Withdrawn) A composition for clear coating of in-mold-coating, comprising:

- a first unpigmented mixture including a polyol and a first solvent; and

a second mixture including an aliphatic polyisocyanate and a second solvent; and wherein the first mixture and the second mixture have a volume ratio of between 1.5:1 and 3:1.

Claim 11 (Withdrawn) A composition according to claim 10, wherein the first solvent is selected from the group consisting of ketones, acetates and xylene.

Claim 12 (Withdrawn) A composition according to claim 10, wherein the second solvent is selected from the group of consisting of ketones, acetates and xylene.

Claim 13 (Withdrawn) A composition according to claim 12, wherein the first solvent is same as the second solvent.

Claim 14 (Withdrawn) A kit for in-mold clear coating of a substrate, the kit comprising,

- a first unpigmented mixture including a polyol and a first solvent;
- a second mixture, including an aliphatic polyisocyanate and a second solvent, for mixing with the first mixture at a volume ratio of between 1.5:1 and 3:1 to form a clear coat;
- a third pigmented mixture including a polyol and a third solvent; and
- a fourth mixture, including an aliphatic polyisocyanate and a fourth solvent, for mixing with the third mixture at a volume ratio of between 1.5:1 and 3:1 to form a pigmented coat.

Claim 15 (Currently amended) An in-mold coating method of preparing a plastic part with a clear-coat surface, the method comprising:

- providing a mold having a mold surface having a predetermined degree of finish;
- heating the mold to a temperature between approximately 40 degrees Celsius and approximately 95 degrees Celsius;
- providing an unpigmented first-reactant/solvent mixture;
- providing an unpigmented second-reactant/solvent mixture;

mixing the unpigmented first-reactant/solvent mixture and the unpigmented second-reactant/solvent mixture to form a clear-coat mixture;
spraying the clear-coat mixture onto the heated mold surface, the clear-coat mixture having an open time on the heated mold surface;
providing a pigmented third-reactant/solvent mixture;
providing a fourth-reactant/solvent mixture;
mixing the pigmented third-reactant/solvent mixture and the fourth-reactant/solvent mixture to form a pigmented mixture;
spraying the pigmented mixture, during the open time of the clear-coat mixture, onto the clear-coat mixture previously sprayed onto the heated mold surface;
applying, over the sprayed pigmented mixture, a substrate-forming material, so as to create an uncured preform; and
allowing the preform to cure so as to form a substrate having a clear-coat surface with substantially the predetermined degree of finish.

Claim 16 (Original) The method according to claim 15, wherein the mold may be opened to permit spraying onto the mold surface; wherein the mold is closed after the pigmented mixture is sprayed onto the clear-coat mixture; and wherein the substrate-forming material is injected into the closed mold.

Claim 17 (Original) The method according to claim 15, wherein a barrier formulation is applied on the sprayed pigmented mixture so as to create an unreinforced barrier layer; wherein the substrate-forming material includes a polymeric-matrix-forming material and reinforcing components and is applied over the barrier layer; and wherein the preform is cured so as to form a composite with a reinforced substrate and a clear-coat pigmented surface.

Claim 18 (Original) The method according to claim 17, wherein the reinforcing components include fibers.

Claim 19 (Original) The method according to claim 15, wherein the unpigmented first-reactant/solvent mixture and the pigmented third-reactant/solvent mixture include polyol as a reactant, and wherein the second-reactant/solvent mixture and the fourth-reactant/solvent mixture include isocyanate as a reactant.

Claim 20 (Currently amended) The method according to claim 19, further comprising:

- (a) mixing the unpigmented first-reactant/solvent mixture and the unpigmented second-reactant solvent mixture ~~at a volume ratio substantially between 1.5:1 and 3.0:1, respectively,~~ to form ~~a combined~~ the clear-coat mixture of ~~unpigmented first-reactant/solvent mixture and unpigmented second-reactant/solvent mixture~~ having a total volume fraction of solids substantially ~~in the range~~ between 0.30 and 0.60; and
- (b) mixing the pigmented third-reactant/solvent mixture and the ~~pigmented~~ fourth-reactant solvent mixture ~~at a volume ratio substantially between 1.5:1 and 3.0:1, respectively,~~ to form ~~a combined~~ the pigmented mixture of ~~pigmented third-reactant/solvent mixture and pigmented fourth-reactant/solvent mixture~~ having a total volume fraction of solids substantially between 0.30 and 0.60.

Claims 21 – 24 (Cancelled)

Claim 25 (Withdrawn) A plastic product covered with a clear coating, the product being made by a method comprising:

providing a mold having a mold surface having a predetermined degree of finish, the degree of finish such that a mating surface of cured polymer-based material fabricated in the mold would exhibit a "Class A" quality;

heating the mold to a temperature between approximately 40 degrees Celsius and approximately 95 degrees Celsius;

providing an unpigmented first-reactant/solvent mixture;

providing an unpigmented second-reactant/solvent mixture;

mixing the first-reactant/solvent mixture and the second-reactant/solvent mixture to form a clear-coat mixture;

spraying the clear-coat mixture onto the heated mold surface, the clear-coat mixture having an open time on the heated mold surface;
providing a pigmented third-reactant/solvent mixture having at least 40% solids;
providing a fourth-reactant/solvent mixture;
mixing the third-reactant/solvent mixture and the fourth-reactant/solvent mixture to form a pigmented mixture;
spraying the pigmented mixture, during the open time of the clear-coat mixture, onto the clear-coat mixture previously sprayed onto the heated mold surface;
applying, over the sprayed pigmented mixture, a substrate-forming material, so as to create an uncured preform; and
allowing the preform to cure so as to form a substrate having a clear-coat surface.

Claim 26 (Withdrawn) A plastic product covered with a clear coating, the product being made by a method comprising:

providing a mold having a mold surface having a predetermined degree of finish, the degree of finish such that a mating surface of cured polymer-based material fabricated in the mold would exhibit a "Class A" quality;

heating the mold to a temperature between approximately 40 degrees Celsius and approximately 95 degrees Celsius;

providing an unpigmented first-reactant/solvent mixture;

providing an unpigmented second-reactant/solvent mixture;

mixing the unpigmented first-reactant/solvent mixture and the first reactant/solvent mixture to form a clear-coat mixture;

spraying the clear-coat mixture onto the heated mold surface, the clear-coat mixture having an open time on the heated mold surface;

applying, over the sprayed unpigmented mixture, during the open time of the clear-coat mixture, a substrate-forming material, so as to create an uncured preform; and

allowing the preform to cure so as to form a substrate having a clear-coat surface.

Claims 27 – 30 (Cancelled).

Claim 31 (New) The method according to claim 15, wherein the clear-coat mixture and the pigmented mixture are sprayed in an amount to form a total coating layer thickness substantially between 3.0 to 4.0 mils DFT.

Claim 32 (New) An in-mold coating method of preparing a plastic part with a clear-coat surface, the method comprising:

- providing a mold having a mold surface having minimal surface roughness;
- heating the mold to a temperature between approximately 40 degrees Celsius and approximately 95 degrees Celsius;
- providing an unpigmented first-reactant/solvent mixture;
- providing an unpigmented second-reactant/solvent mixture;
- mixing the unpigmented first-reactant/solvent mixture and the unpigmented second-reactant/solvent mixture to form a clear-coat mixture;
- spraying the clear-coat mixture onto the heated mold surface, the clear-coat mixture having an open time on the heated mold surface;
- providing a pigmented third-reactant/solvent mixture;
- providing a fourth-reactant/solvent mixture;
- mixing the pigmented third-reactant/solvent mixture and the fourth-reactant/solvent mixture to form a pigmented mixture;
- spraying the pigmented mixture, during the open time of the clear-coat mixture, onto the clear-coat mixture previously sprayed onto the heated mold surface;
- applying, over the sprayed pigmented mixture, a substrate-forming material, so as to create an uncured preform; and
- allowing the preform to cure so as to form a substrate having a clear-coat surface, the clear-coat surface having a high gloss finish;

wherein the clear-coat mixture and the pigmented mixture are sprayed in an amount to form a total coating layer thickness substantially between 3.0 to 4.0 mils DFT,

Claim 33 (New) The method according to claim 32, wherein the mold may be opened to permit spraying onto the mold surface; wherein the mold is closed after the

pigmented mixture is sprayed onto the clear-coat mixture; and wherein the substrate-forming material is injected into the closed mold.

Claim 34 (New) The method according to claim 32, wherein a barrier formulation is applied on the sprayed pigmented mixture so as to create an unreinforced barrier layer; wherein the substrate-forming material includes a polymeric-matrix-forming material and reinforcing components and is applied over the barrier layer; and wherein the preform is cured so as to form a composite with a reinforced substrate and a clear-coat pigmented surface.

Claim 35 (New) The method according to claim 34, wherein the reinforcing components include fibers.

Claim 36 (New) The method according to claim 32, wherein the unpigmented first-reactant/solvent mixture and the pigmented third-reactant/solvent mixture include polyol as a reactant, and wherein the second-reactant/solvent mixture and the fourth-reactant/solvent mixture include isocyanate as a reactant.

Claim 37 (New) The method according to claim 36, further comprising:

- (a) mixing the unpigmented first-reactant/solvent mixture and the unpigmented second-reactant solvent mixture to form the clear-coat mixture having a total volume fraction of solids substantially between 0.30 and 0.60; and
- (b) mixing the pigmented third-reactant/solvent mixture and the fourth-reactant solvent mixture to form the pigmented mixture having a total volume fraction of solids substantially between 0.30 and 0.60.